



**MATHATRON<sup>®</sup>**

**A NEW CONCEPT  
IN ELECTRONIC COMPUTATION**

### **a new concept in efficient, low-cost computation**

The Mathatron is the first electronic computing device to provide the benefits of automatically programmed electronic digital computation plus the convenience and simplicity of operation of desk calculators in a single low cost unit. For less than \$5,000 (a fully equipped Mathatron 4-24 costs only \$3,490), you can have a complete stored program electronic digital computation center right at your fingertips.

### **proven capability—printed output**

The field proven Mathatron is the only electronic calculator that lets you enter data and programs using ordinary mathematical notation including parentheses. It's the only electronic calculator that gives you a complete printed record of all calculations and solutions. It's the only electronic calculator that gives you a choice of output media. It's the only electronic calculator that can grow to meet your increasing computational needs.

### **solid-state reliability—automatic decimal point location**

But that's not all. There are many other features that have made the Mathatron the choice of hundreds of organizations throughout the United States and Canada. Ferrite core program memory and individually addressable storage registers eliminate the need for manual re-entry of formulas, numbers, programs, or intermediate results. All answers are computed to at least 8 significant digit accuracy with a 2 digit power of 10 exponent. One hundred column number capacity ( $10^{-42}$  to  $10^{+58}$ ) virtually eliminates overflow problems. Frequently used formulas, sequences, or constants can be pre-wired and called in by touching a single button on the keyboard. Floating point arithmetic locates decimal points completely automatically.

### **choice of input/output**

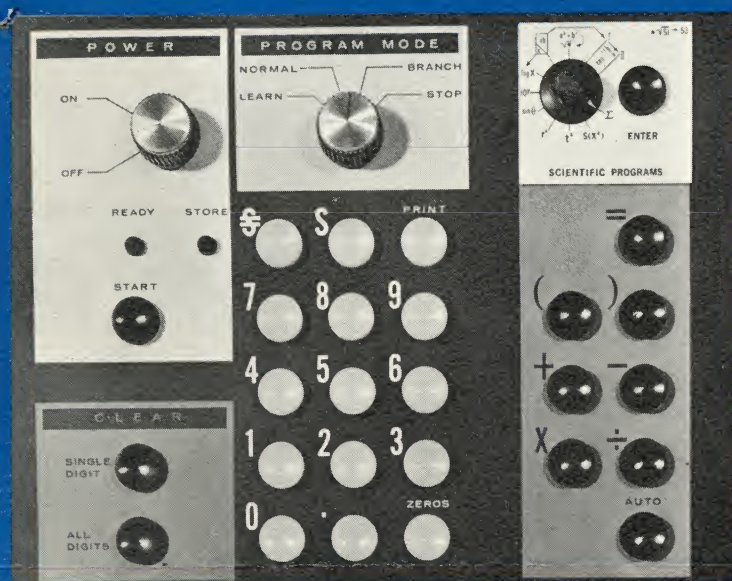
And if that's not enough, you can choose any combination of input/output media to tailor the Mathatron to your specific computational needs. Output media include printed paper tape, page printout on 8½ inch wide paper to any length desired, 8 level punched paper tape, and direct connection to other devices through an electronic interface. Data may be entered directly through the Mathatron keyboard, through remotely located keyboards, by using punched paper tape, or directly through the Mathatron's electronic interface.

### **special models**

If you're interested in mathematical, statistical, scientific, civil engineering, or surveying calculations there are special Mathatron models designed for maximum efficiency in these areas. If you're concerned with process control applications, there's a low cost Mathatron computational unit with direct electronic interface for rack mounting.

Whatever your computational problems may be, there's a Mathatron that can help you solve them efficiently and economically. Why not ask your Mathatron representative to arrange a demonstration for you in your office or laboratory. He'll be happy to show you how the Mathatron can save you time, money and effort.





The Mathatron keyboard provides ease of operation and great flexibility. By touching only 2 or 3 keys, data may be stored or retrieved at will. Simple or complex programs and formulas may be entered, stored, and re-used as often as desired. Pre-wired sequences and constants can be entered by touching a single key. Operator errors are easily correctable.

#### SAMPLE PRINTOUT OF LINEAR LEAST SQUARES CALCULATION

$Y=A+BX$      $A=:4.2860714$      $B=: .951785714\&01$

"X"	CAL "Y"	DATA "Y"	OLD-CAL	(OLD-CAL) +2
12	5.428214	5.7	.271785	.073867
18	5.999285	5.68	-.319285	.101943
24	6.570357	6.25	-.320357	.102628
30	7.141428	7.21	.068571&02	.470204
36	7.712499	8.02	.307500	.094556
42	8.283571	8.71	.426428	.181841
48	8.854642	8.42	-.434642	.188914

The Mathatron automatically provides a complete printed record of all calculations and solutions in easily readable form. Printed output can be stored for reference, mailed, or attached to other documents. Contents of storage registers may be printed out at any time for reference without affecting the calculation in process. Eight level punched punched paper tape can be produced as a by product.

PARENTHICATION AND AUTOMATIC DECIMAL POINT  
LOCATION ARE STANDARD FEATURES

COMPLEX NU  
W

$((25+8 \times 12.5)2-50) \div (1-2 \times 8 \div 4) = -66.666667$

98546X81231



Mathatron keyboard provides  
 operation and great flexibility.  
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 as often as desired. Pre-wired  
 ces and constants can be en-  
 y touching a single key. Opera-  
 rs are easily correctable.



## ULATION

CAL (OLD-CAL) \*2

785	•073867
285	•101943
357	•102628
571&02	•470204
500	•094556
428	•181841
642	•188914

calculations and solutions in  
 or attached to other docu-  
 reference without affecting  
 e produced as a by product.



COMPLEX NUMBERS CAN BE STORED AND RE-USED  
 WITHOUT MANUAL RE-ENTRY

98546 X 81231 = S1 S1 X S1 X S1 = 512958703 \* 21

Hundreds of Mathatrons are now in use handling a wide range of scientific, mathematical, statistical, engineering, and business computations, with speed, accuracy, and economy. Typical applications include:

- Determination of trigonometric functions
- Raising numbers to any power
- Solution of cubic, quadratic and fifth degree equations
- Evaluation of polynomials
- Simultaneous equations
- Linear correlations
- Determination of standard deviations
- Correlations and distributions
- Radix conversions
- Great circle calculations
- Surveying and mapping calculations
- Estimation of operating costs, cash flow analysis
- Calculation of mortgage payment tables
- Evaluation of investment portfolios
- Determination of bond prices

Operating instructions are available on these and hundreds of others.

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Whatever  
can help y  
Mathatron  
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time, mon



# The MATHATRON . . . a new concept in electronic computation . . .

## INTERNAL OPERATIONS

Floating point arithmetic, built-in parenthecation, automatic decimal point location

## SPEED

100 accumulations per second

## NUMBER RANGE

100 columns . . .  $\pm 10^{-42}$  to  $10^{+58}$

## ACCURACY

Addition: 9 significant digits (not rounded)

Multiplication/Division: 9 significant digits (manipulated);  
8 significant digits (rounded)

## CIRCUITRY

Solid-state computer logic and circuitry, ferrite core program memory and storage registers

## POWER REQUIREMENTS

190-240 watts, 105-125 volts, 50 or 60 cycle

## COOLING REQUIREMENTS

none

## DIMENSIONS

21½ inches wide, 25 inches deep, 13½ inches high

## PROGRAM MEMORY CAPACITY

24, 48, or 480 steps

Mathematical operators: (,), +, ×, −, ÷, each require 1 step; specifying storage register requires 2 steps in the 24 or 48 step option and requires 3 steps in the 480 step option.

## STORAGE REGISTERS

4, 8, or 48 individually addressable registers

Each register can store a number ranging from  $\pm 9$  significant digits plus a 2 digit power of 10 exponent, plus sign

## INPUT MEDIA

Direct entry keyboard, 8 level punched paper tape, remote location keyboard, electronic interface

## OUTPUT MEDIA

Printed paper tape, page printout on 8½ inch wide paper to length desired, 8 level punched paper tape, electronic interface

**The Mathatron is sold and serviced by:**

## EMTECH RESEARCH PRODUCTS CORPORATION

12 Potter Avenue • New Rochelle, N. Y.

Phone: (914) 235-7500

**ask them for a demonstration in your office or laboratory.**

**MATHATRONICS, Inc.      241 Crescent Street      Waltham, Mass. 02154 U.S.A.**

**Telephone: (617) 893-1630**

TO EMTECH:

☐ I WOULD LIKE INFORMATION FOR MY FILES

We may have need for a MATHATRON and would like specific information on the following applications:

- ☐ Statistical
- ☐ Scientific
- ☐ Mathematical
- ☐ Civil Engineering
- ☐ General Business
- ☐ Process Control

I am also interested in:

- ☐ Full-page Alphanumeric Printout
- ☐ Expanded Memory
- ☐ Punched Tape Input/output
- ☐ Punched Card Input/output

☐ NOTIFY ME OF THE NEXT DEMONSTRATION  
IN MY AREA

☐ PLEASE HAVE A SALES REPRESENTATIVE  
CALL FOR AN APPOINTMENT

\_\_\_\_\_  
name-title

\_\_\_\_\_  
organization-department

\_\_\_\_\_  
street

\_\_\_\_\_  
city-state-zip

\_\_\_\_\_  
phone-extension

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NEW YORK

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